Pharmacology and Toxicology

UDC 612-06:632.95(025)

USSR

AKHMEDZHANOV, K. A., Docent and KHALPAYEV, O. SH., Chair of Hygiene, Tashkent Institute for the Advanced Training of Physicians

"Influence of Small Concentrations of Organophosphorus Compounds on an Organism"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 8 , Aug 73, pp 90-93

Abstract: Organophosphorus compounds such as the active contact preparations thiophos, metaphos, and karbophos and other highly efficient systemic insecticides methylmercaptophos, butophos phosohamide, E-74 and E-81 compounds are different from the organochlorine compounds as the former are less persistant in the surrounding environment, have a wide range of pesticidal activity and are more economical. Several studies on the exposure of humans to doses amounting to two to three times the maximum recommended doses were reviewed. Symptoms observed included a change in the EKG, arterial hypotension, vegetative dystonia, a change in immunobiological reactions and others. Compounds such as BCZH, DDVF and DDT were considered relative to the organophorous compounds. Studies were conducted on the effects of phosphamide, chlorophos, and butophos on the physiological functions of animals by observing the changes in the cytochromic indicators of neutral leukocytes and in basic phosphatase, peroxidase, and lipid and glycogen concentrations. Large changes were observed in the cholinesterase system.

1/1

USSR UDC: [537.226+537.311.33]:[539.3+536.21+536.631+536.691]

NASYROV, A., AKHMEDZHANOV, F. R., and MUMINOVA, M. F.

"Investigating the Attenuation of Longitudinal Ultrasonic Waves in Gallium Arsenide and Indium Arsenide"

Tr. Samarkand. un-ta (Transactions of the Samarkand University) No. 201, 1971, pp 76-80 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E790)

Translation: The velocity of propagation v_e and the frequency dependence of the attenuation factor $\alpha(f)$ of longitudinal ultrasonic waves in n-type GaAs and InAs are measured by the pulse method in the "pass" mode, in the frequency range of 30-220 MHz at room temperature. The mechanism of the $\alpha(f)$ is discussed, and v_e is determined, in the GaAs and InAs, to be $5.1 \cdot 10^5$ and $4.2 \cdot 10^5$ cm/s respectively.

1/1

USSR

UDC 547.558.1

AKHMEDZADE, D. A., YASNOPOL'SKIY, V. D., and CUSEYNOVA, M. M.

"Synthesis of Some α-Thienylphosphinite Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1701-1702

Abstract: A series of new α-thienylphosphinous acid esters was obtained by the reaction of α-thienyldichlorophosphine with phenol and alkylphenols.

1/1

USSR UDC 678.742.66.081

AKHMEDZADE, D. A., MARKOVA, YE. I., IBRAGIMOVA, D. S., and DZHANIBEKOV, N. F., INKHP, Academy of Sciences Azerbaydzhan SSR

"Stabilization of Polypropylene by Certain Salts of O,O-Diphenyldithiophosphoric Acid"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 4, 1972, pp 98-101

Abstract: Ni, Co, Cd, Ba, Ca, and Mg salts of O,O-diphenyldithiophosphoric acid were studied for their stabilizing effects on polypropylene (brand 0.5P10/20). The salts were added to powder preparations of polypropylene to final concentrations of 0.5, 1.0, or 3.0 wt%, which were then subjected to 200 atm at 260°C to form 0.2-0.4 mm thick plates. The effects of heat, aging, and light on these plates were then evaluated in terms of physicomechanical and rheological indexes, as well as on the basis of oxidation induction periods. The results confirmed previous studies that Ni, Co, and Cd salts were most effective in this respect, and that the optimal concentrations ranged from 0.5-1.0 wt%. Although even greater effectiveness was obtained with certain salts at a concentration of 3.0 wt%, the use of such high concentrations is contraindicated.

1/1

USSR UDC 624.072.32

AKHMED'YANOV, I. S.

"Calculation of a Circular Ring for an Arbitrary Three-Dimensional Load"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1971, No. 48, pp 74-85 (from Mzh-Mekhanika, No 3, Mar 72, Abstract No 3V1073)

Translation: A plane circular ring of small curvature and const at cross section acted on by an arbitrary three-dimensional load is examined considering the tensility of the axial line of the ring. Differential equations for the equilibrium of an element of the ring are given for the undeformed state. The method of solution reduces to integrating the equations in displacements composed of the initial displacements. A calculation of a ring for symmetric and inversely symmetric loads is given. V. I. Kostrov.

1/1

USSR

UDC 539.214;539.374

AKHMED'YANOV, I. S., KIREYEV, A. V.

"Integration of Differential Equations for the Elastic-Plastic Bending of a Spherical Shell Under an Arbitrary Load"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1972, No. 63, pp 33-39 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V449)

Translation: The problem of integrating the nonlinear differential equations of elastic-plastic deformations of a spherical shell under an arbitrary load is discussed. By expansion into Fourier series the component of the surface load and the nonlinear terms of the equation are reduced to a system of ordinary differential equations which is solved by consecutive approximations. Expressions are obtained for the forces, moments, and displacements for each approximation. Authors' abstract.

1/1

USSR UDC:629.78.015.4

AKHMED'YANOV, I. S.

"Design of a Spherical Shell Loaded Through an Eccentrically Placed Rigid Circle"

Tr. Kuybyshev. Aviats. In-t [Works of Kuybyshev Aviation Institute], 1973, No 60, pp 28-43 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 9, 1973, Abstract No 9.41.137)

Translation: The stress state of a spherical shell with a rigid circular washer placed at some distance from the peak is studied. An arbitrary force and moment acting in the meridianal plane of the shell are applied to the washer. The problem is solved on the basis of the moment theory of a spherical shell with arbitrary loading. Boundary conditions are written in the form of an infinite system of linear equations relative to arbitrary constants. A numerical example is studied. 14 Figures; 3 Biblio. Refs. Resume

1/1

Aeronautical & Space

USSR UDC:629.78.015.4

AKHMED'YANOV, I. S., GORBATENKO, V. V.

"Calculation of a Spherical Shell with Support Around a Rigid Washer"

Tr. Kuybyshev. Aviats. In-t [Works of Kuybyshev Aviation Institute], 1973, No 60, pp 51-60 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 9, 1973, Abstract No 9.41.138)

Translation: The stress state of a spherical shell with a rigid circular washer and support is studied. The support, made of the same material as the shell, consists of a circle in the form of a strip of a spherical shell of greater thickness, in the form of a washer. It is assumed that the radii of the middle surfaces of the shell and support are the same. The system is loaded with a force and moment applied to the washer and acting in a certain meridianal plane. The necessary calculation formulas are presented for calculation of stresses in the shell and in the support, as well as the results of certain numerical calculations. 7 Figures; 4 Biblio. Refs. Resume

1/1

USSR

UDC: 621.774.31

POTAPOV, I. N., POLUKHIN, P. I., GUN, G. Ya., and AKHMEDSHIN, R. I.

"Questions of Optimizing the Process of Piercing on Cross-Screw Rolling Mills"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya" Publishing House, No 64, 1970, pp 23-28

Translation: The article considers the problem of using the mathematical theory of planning an experiment to determine the optimal value of mill productivity considering all factors influencing the process and limitations superimposed on the conditions under which cross-screw rolling occurs. The mathematical theory of the experiment makes it possible to work out principles of continuous optimal control over the process of cross-screw rolling with due regard for changes in the process related to the action of various uncontrolled factors. Two illustrations and 10 bibliographic entries.

1/1

USSR

UDC 591.185.3.633.88

KARAYEV, A. I., KHANUKAYEV, E. M., and AKHMEDOVA, E. R., Institute of Physiology, Academy of Sciences, Azerbaydzhan SSR

"The Effect of Essential Oils From Oleander Flowers on the Electrical Activity of Some Structures in the Rabbit Brain"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, No 5, 1970, pp 85-89

Abstract: Five alert rabbits with implanted brain electrodes were exposed to the aroma from oleander flowers, which is known to have a rather stupefying effect when inhaled for some time. Analysis of the EEG revealed desynchronization in the sensorimotor cortex, an ordered theta rhythm in the reticular formation and limbic cortex, and bursts of electrical activity (40 oscillations per sec with a periodicity of 4 to 5 sec) in the olfactory bulb. This reaction continued briefly even after the cessation of stimulation, after which electrical activity gradually returned to normal. It is pointed out that emotional stress in the rabbit triggers the same cortical reaction.

1/1

USSR

IBRAGIMOV, I. I., and AKHMEDOV, T. G., Doklady Akademii Nauk SSSR, Vol 208, No 3, 1973, pp 524-527

$f_2(t)$ are monotone positive functions, $z^{\varphi(t)}$ is one of the branches of the function $e^{\varphi(t)\ln z}$ single-valued in the plane z with a cut along the negative part of the real axis, and $A(t)$ is a complex-valued function of variation constraints on any finite segment of the real axis. In addition, the set on which the integral $I(z)$ does not converge absolutely is determined.

2/2

USSR

UDC 517.537

IBRAGIMOV, I. I., Academician of the Academy of Sciences Azerbaydzhan SSR, and AKHMEDOV, T. G., Institute of Mathematics and Mechanics, Academy of Sciences Azerbaydzhan SSR, Baku

"On the Point Set of Absolute Convergence of Some Stieltjes Integrals With a Complex Parameter"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 3, 1973, pp 524-527

Abstract: The article determines the point set of absolute convergence of the Stieltjes integral

$$I(z) = \int_{-\infty}^{\infty} z^{\varphi(t)} e^{if(t)} dA(t)$$

assuming that $\varphi(t) = \varphi_1(t) + i\varphi_2(t)$ and $f(t) = f_1(t) + if_2(t)$ are complex functions of a real variable, $\varphi_1(t) = \mathrm{Re}\,\varphi(t)$ is an odd function, $f_1(t)$ and

UDC 547.341

USSR

ISMAILOV, V. M., KOVMUZOV, S. A., KRASILOV, A. M., and AKHMEDOV, SH. T.
Azerbaydzhan State University Imeni S. M. Kirov

"Reaction of Phosphorus Pentachloride With Isoprene Hydrochlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, p 1197

Abstract: Studying the effect of two electron donating and one electron accepting substituents at the olefinic bond on the phosphorylation the reaction of phosphorus pentachloride with primary and tertiary isoprene hydrochlorides was studied. It has been shown that in both cases the reaction leads to the products of chlorination and phosphorylation. In the process 1-chloromethyl-2-chloro-2-methylpropylphosphonic acid dichloride was synthesized which could undergo dehydrochlorination after prolonged heating to yield 1-chloromethyl-2-methyl-propenyl-1-phosphonic acid dichloride.

1/1

USSR

UDC 547.492:547.493

AKHMEDOV, SH. T., AKHUNDOVA, M. A., ALEKPEROV, R. K., Azerbaydzhan State University

"Synthesis of Substituted β-Phenoxyethyl Esters of Chloroformic Acid"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 10, Oct 71, pp 2127-2129

Abstract: The article describes the synthesis of substituted β-phenoxyethyl esters of chloroformic acid by condensation of substituted β-hydroxyphenetoles with phosgene. The reaction of the synthesized β-o-methylphenoxyethyl chloroformate with ammonia gives the corresponding urethane.

1/1

USSR

UDC 547.341 + 546.185'131

ISMAILOV, V. M., MOSKVA, V. V., RABAYEVA, T. A., RAZUMOV, A. I., AKHMEDOV, SH. T., ZYKOVA, T. V., and SALAKHUTDINOV, R. A., Kazan' Chemical-Technological Institute Imeni S. M. Kirov, and Azerbaydzhan State University Imeni S. M. Kirov

"Derivatives of Substituted Vinylphosphonic Acids. XV. Reaction of Phosphorus Pentachloride With α,β-Dichlorovinyl Alkyl Ethers"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1011-1113

Abstract: It was shown that α,β-dichlorovinyl alkyl ethers react with phosphorus pentachloride in an inert solvent such as benzene or carbon tetrachloride at 0-5° forming a complex which after decomposition with hydrogensulfide yields α,β-dichloro-β-alkoxyvinylphosphonic or thiophosphonic acid dichlorides. The reaction is sensitive to temperature; increased temperature lowers the phosphorylation products and increases the byproducts. Analogous derivatives may be obtained by high temperature chlorination of β-alkoxyvinylphosphonic acid dichlorides.

1/1

3

USSR

ISMAILOV, V. M., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, p 212

duct (I) decreases with a decrease in the phosphorus pentachloride taken. This indicates that product (I) is the final product of the presented interaction. The experimental procedure for obtaining the product and infrared and other data confirming its structure are presented.

2/2

(3)

UDC 547.241+546.185'131

USSR

ISMAILOV, V. M., MOSKVA, V. V., NOVRUZOV, S. A., RAZUMOV, A. I., AKHMEDOV, SH. T., ZYKOVA, T. V., and SALAKHUTDINOV, R. A.

"Interaction of Phosphorus Pentachloride with Alkyl Acetates"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, p 212

Abstract: Under mild conditions (neutral solvent, 15-20°), the interaction of phosphorus pentachloride with alkyl acetates takes place with the formation of phosphorylation products, the nature of which depends on the reagent ratio. With a quadruple excess of phosphorus pentachloride, depending on the alkyl radical in the initial esters (R = Me, Et), the basic product can be the trichloranhydride of cihlorophosphonacetic acid (I)

$$CH_3C(=O)OR + 4PCl_5 \rightarrow [\text{complex}] \xrightarrow{SO_2} Cl_2PCCl_2C(=O)Cl$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad O$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad I$$

With smaller amounts of phosphorus pentachloride, more complex mixtures of products of phosphorylation are formed in which the proportion of the pro-

1/2

UDC 547.341 + 546.185'131

USSR

ISMAILOV, V. M., ZYKOVA, T. V., MOSKVA, V. V., NOVRUZOV, S. A., RAZUMOV, A. I., AKHMEDOV, SH. T., and SALAKHUTDINOV, R. A., Kazan' Chemical-Technological Institute Imeni S. M. Kirov, and Azerbaydzhan State University Imeni S. M. Kirov

"Derivatives of Substituted Vinylphosphonic Acids. XVI. Scheme for the Phosphorylation of Alkylacetates With Phosphorus Pentachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 6, Jun 73, pp 1247-1250

Abstract: Reactions of phosphorus pentachloride with ethylacetate have been investigated using different reagent ratios. It has been established that the reaction products consist of β-chloro-β-ethoxyvinylphosphonic acid dichlorides and phosphonodichloroacetic acid trichlorides. The first step in this reaction is the replacement of the carbonyl oxygen atom with two chlorine atoms yielding α, α-dichloroethylalkyl ether, which upon dehydrochlorination yields α-chlorovinylalkyl ether. The latter reacts with PCl_5 yielding the final products. On the basis of NMR data, it has been shown that the β-chloro-β-ethoxyvinylphosphonic acid dichloride forms in two geometric isomers.

1/1

USSR

ISMAILOV, V. M., et al., Azerbaydzhanskiy Zhurnal, No 4, 1972, pp 47-49

latter with an additional portion of PCl_5 at 70-80°C results in the corresponding ester chloroanhydride of α-chloro-β-ethoxyvinylphosphonic acid, in which treatment with excess alcohol in the cold replaces one of the Cl atoms on the P atom with an alkoxy group, and on further reaction with PCl_5 at 110°C yields the dichloroanhydride of α-chloro-β-ethoxyvinylphosphonic acid. The above approach may be utilized to replace 2 or 3 of the alkoxy groups with Cl. The resultant chloroanhydrides are readily distilled liquids with a characteristic odor, and are stable on long-term storage in the cold.

2/2

UDC 547.26.118+547.341

USSR

ISMAILOV, V. M., MOSKVA, V. V., BABAYEVA, T. A., AKHMEDOV, SH. T. and RAZUMOV, A. I., Kazan Institute of Chemical Technology imeni Kirov, and Azerbaydzhan State University imeni Kirov

"Mixed Esters and Ester Chloroanhydrides of β-Alkoxyvinylphosphonic and -Thiophosphonic Acids"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 4, 1972, pp 47-49

Abstract: Mixed dialkyl and alkylaryl esters of β-alkoxyvinylphosphonic acids were synthesized by reacting ester chloroanhydrides with alcohols (1 mole) or phenol at 0-5°C under a current of dry CO_2 in the absence of HCl acceptor. Treatment of the mixed dialkyl esters with PCl_5 yielded the corresponding chloroanhydrides by substitution of Cl for the different alkoxy groups. Conditions were determined for the substitution of Cl atoms for the alkoxy groups (2 on the P atom and 1 on the C atom) by reacting diethyl- β-ethoxyvinylphosphonate with PCl_5 in CCl_4. At 40-50°C one of the alkoxy groups on the P atom is replaced by Cl giving the appropriate ester chloroanhydride. Reaction of the

1/2

USSR

UDC 547.341+547.26.118

ISMAILOV, V. M., MOSKVA, V. V., BABAYEVA, T. A., AKHMEDOV, SH. T., RAZUMOV, A. I.,

"Amido Acid Chlorides and Ether Amides of β-Alkoxyvinyl Phosphonic and Thiophosphonic Acids"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 2 (84), 1973, pp 52-54

Abstract: Partial amidozation of acid dichlorides of β-alkoxyvinyl phosphonic and thiophosphonic acids leads to obtaining of dialkylamido acid chlorides which with alcohol give ester dialkylamides of β-alkoxyvinyl phosphonic acids. These ester dialkylamides were also obtained by amidizing ether acid chlorides and by alcoholysis of tetraalkyl diamides of these acids. The experimental procedures for synthesizing diethylamides of the acid chloride of β-ethoxyvinyl phosphonic and thiophosphonic acids and the ethyl ester of diethylamide of β-ethoxyvinyl phosphonic acid are given with the yields and other physical and chemical characteristics. A schematic is given for the mutual transformations of the amides, amide acid chlorides, ether acid chlorides and ether amides.

1/1

USSR

UDC: 519.2

AKHMEDOV, S. S.

"The Lindeberg Condition for Sums of a Random Number of Terms, and Some Corollaries"

Uch. zap. Tashkent. gos. ped. in-t (Scientific Notes. Tashkent State Pedagogical Institute), 1972, 100, pp 3-12 (from RZh-Kibernetika, No 5, May 73, abstract No 5V30 by the author)

Translation: Necessary and sufficient Lindeberg conditions of convergence to a normal law are extended to the case of a random number of terms in the sum $S_\nu = \xi_1 + \xi_2 + \ldots + \xi_\nu$. In addition, some corollaries are pointed out.

1/1

USSR

LESOVOY, M. P., et al., Mikologiya i Fitopatologiya, No 6, 1972, pp 463-464

same components in breeding wheat varieties. The appearance of new races and biotypes and changes in their virulence are the result of mutation, heterokaryosis, resistant varieties, and sexual hybridization.

2/2

Plant Pathology

USSR UDC 632.4:633.11:632.265.2(47+57)

LESOVOY, M. P., FEDOROVA, V. A., SHKODENKO, V. I. [illegible], P. A., SHOPINA, V. V., ISRAGIMOV, G. R., AKHMEDOV, S. A., [illegible], E. I., MAKOVKINA, A. N., PERESYPKIN, V. F., [illegible]EOYKO, Yu. I., SHAVRINA, Z. A., CHUMAKOV, A. Ye., YAKUSHKO, Z. I., PAVCHARIN, L. V., and [illegible], A. A., All-Union Institute of Plant Protection, Ukrainian Institute of Plant Protection, Ukrainian Agricultural Academy, Azerbaydzhan Institute of Agriculture, Central Asian Institute of Plant Pathology, and Kazakh Institute of Plant Protection, Georgian Institute of Plant Pathology

"Race Formation in Puccinia triticina Erikss. and P. striiformis West. in the USSR"

Leningrad, Mikologiya i Fitopatologiya, No 6, 1973, pp [illegible]

Abstract: Study of the causative agents of orange leaf and stripe rusts of wheat in different parts of the Soviet Union and some other countries showed that, despite the broad variety of races, only a few were widely epidemic. The main races are fairly constant from year to year. This stabilization is due to the fact that there [illegible] wheat varieties in the USSR are susceptible to all races of the pathogen. The racial composition of the pathogens in the USSR is similar to that observed elsewhere in Europe because of the exchange of original [illegible]

1/2

A

USSR

UDC 681.128.3

NABIYEV, I. A., CHEBAREV, A. I., AKHMEDOV, R. M.

"Floating High-Speed Discrete Level Gauge"

Za tekhn. progress (In Search of Technical Progress), 1969, No 7, pp 1-2 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 1, Jan 70, Abstract 1.32.812)

Translation: A noncontinuously indicating level gauge is described. Removal of the information signal in the device is according to the principle of generation cutoff at the moment a metal ring on a float, floating freely on the liquid surface, enters the field of an induction coil in the oscillatory circuit of a self-excited generator, which registers the level of liquid in a contactless manner.

1/1

A

USSR

UDC: 665.6:681.128.3

NABIYEV, I. A., CHEBAREV, A. I., and AKHMEDOV, R. M.

"Floating High-Speed Discrete Level Measuring Device"

Za Tekhn. Progress (for Technical Progress), No 7, pp 1-2, [illegible] (from Referativnyy Zhurnal--Khimiya, No 2, 1970, Abstract No 2 P30l., by I.A.K.)

Translation: A high-speed floating discrete-type level measuring device is described, in which the information signal is taken according to the principle of disruption of oscillation when a metal ring on the float, floating freely on the surface of the fluid, enters the field of the inductance coil of an oscillating circuit, thus determining the fluid level by a contactless method.

1/1

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0123501

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDY PROBLEMS ASSOCIATED WITH THE CONSTRUCTION OF CODE CONVERTERS FOR MECHANICAL MOVEMENT. THE METALLIC INDICATOR OF THE PRIMARY METER OF THE TECHNOLOGICAL PARAMETERS IS USED AS THE DRIVING ELEMENT WHILE A FIXED, ATTACHED, CODING MASK IS USED AS THE SENSING ELEMENT. THE MASK CONSISTS OF AN INSULATING PLATE WITH INDUCTANCE COILS WITH A MAGNETIC CIRCUIT MADE FROM A ROD TYPE MAGNETODIELECTRIC. THESE ARE LOCATED WITH RESPECT TO THE SCALE OF A GIVEN CODE. THE INDUCTANCE COILS ARE GROUPED ACCORDING TO THE NUMBER OF CODE DIGITS AND ARE THUSWISE CONNECTED TO THE OSCILLATION CIRCUITS OF TRANSISTOR TYPE, IC, AUTOGENERATORS OPERATING UNDER CONDITIONS OF GENERATING CURRENT CUT OFF DURING INTRODUCTION OF BODIES INTO THE ELECTROMAGNETIC FIELD OF THE COILS MENTIONED ABOVE. SCHEMES ARE PRESENTED FOR CODING MASKS WITH VARIOUS CODE SCALES. METHODOLOGY FOR THEIR CONSTRUCTION IS GIVEN AND STUDY RESULTS PRESENTED. THESE MAKE IT POSSIBLE TO RAISE THE DISCRIMINATION AND SIMPLIFY THE DESIGN OF THESE MASKS.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CONSTRUCTING A CODE CONVERTER FOR MECHANICAL MOVEMENT WITH FIXED CODING MASKS -U-

AUTHOR-(03)-NABIYEV, I.A., RUSTAMOV, N.S., AKHMEDOV, R.M.

COUNTRY OF INFO--USSR

SOURCE--NOVOCHERKASSK, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY, ELEKTROMEKHANIKA, NO 2, 1970, PP 157-164

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--CODE CONVERTER, MECHANICAL MOTION INSTRUMENT, MAGNETIC CIRCUIT, MAGNETODIELECTRICS, TRANSISTORIZED CIRCUIT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1676 STEP NO--UR/0144/70/000/002/0157/0164

CIRC ACCESSION NO--AT0123501

UNCLASSIFIED

USSR

AKHMEDOV, R.B., et al, Izvestiya Akademii Nauk UzSSR, No 2, 1971, pp 53-57

The differential equation of the total pressure versus distance from the axis is obtained by the method of heat transfer analogy. The general solution of this equation is given. The numerical values of the boundary conditions are obtained by making the theoretical and experimental peaks of the total pressure versus distance from axis curves to coincide. Above curves are given for 30° and 40° vortex angles and for several distances from the burner exit.

2/2

USSR

UDC: 533.601.1

AKHMEDOV, R. B., BALAGULA, T. B., RASHIDOV, F. K.

"Aerodynamics of Vortex Jet Near the Nozzle"

Tashkent, Izvestiya Akademii Nauk UzSSR, No. 2, 1971, pp 53-57

Abstract: Results of theoretical and experimental investigation of vortex jets are presented. The vortex is produced by the vanes of a vortex generator.

The vortex jets are of interest because of their use in gas burners.

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133806

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFICIENCY OF THE DISTN. COLUMNS WAS IMPROVED BY APPLYING INTERMEDIATE CIRCULATING REFLUX ON 2 CROSS SECTIONS. THE CAPACITY OF THE PLANT WAS INCREASED BY INCREASING THE TOTAL HEAT EXCHANGING SURFACE TO LARGER THAN OR EQUAL TO 18.6 M PRIME2-TON FEED. THE EFFICIENCY OF THE HEAT EXCHANGERS WAS INCREASED WHEN THE VELOCITY OF PETROLEUM FEED WAS INCREASED TO 1.59 M-SEC.

FACILITY: BAKIN. NEFTEPERERAB. ZAVOD, BAKU, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EXPERIMENTAL REDESIGN OF APPARATUS FOR THE ATMOSPHERIC DISTILLATION OF PETROLEUM -U-

AUTHOR-(05)-FARAMAZOV, S.A., ALIYEV, A.A., AKHMEDOV, N.I., KOSENKOV, V.G., DAVIDYAN, L.K.

COUNTRY OF INFO--USSR

A

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (4), 10-12

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MILITARY SCIENCES

TOPIC TAGS--PETROLEUM DISTILLATION, PETROLEUM REFINING EQUIPMENT, HEAT EXCHANGER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1962 STEP NO--UR/0318/70/000/004/0010/0012

CIRC ACCESSION NO--AP0133806

UNCLASSIFIED

USSR UDC 624.131.43+539.21.084-492.3

AKHMEDOV, M. A.

"The Penetration of a Wedge and a Cone Into a Soil Semispace"

Tashkent, Prochnost' i Seysmostoykost' Sooruzh -- Sbornik (The Strength and Earthquakeproof Natrue of Structures -- Collection of Works), Jan 1971, pp 180-183 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V547 by G. M. Shefter)

Translation: The article deals with the penetration, at a constant rate of a wedge and a cone with an angle of aperture greater than 90^0, into a semispace occupied by a so-called plastic gas. The rate of penetration is assumed to be such that the point of intersection of the edge of the wedge or the generatrix of the cone with the free surface of the semispace moves at a velocity greater than the velocity of sound in this medium. The plastic gas in the region of unloading behaves as an incompressible fluid; therefore in this region the author solves the Neumann problem for a Laplace equation. For the case of a wedge, the solution is sought in the form of a Fourier series, for a cone -- in the form of an expansion into a series on the basis of Legendre polynomials. The coefficients are determined approximately, by means of satisfying the boundary conditions at the necessary number of points. It is pointed out that some specific calculations for the wedge were conducted.
1/1

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RPH (R CONTG. 1-5 C ATOMS) FROM GAS CONDENSATE WAS CONVERTED TO RC SUB6 H SUB4 CH SUB2 CL IN 75-90PERCENT YIELD AT 80-90DEGREES WITH 1.2 MOLES PARAFORMALDEHYDE IN CONCD. HCL CONTG. ZNCL SUB2 AND SATD. WITH HCL. HEATING WITH AQ. PYRIDINE, ET SUB3 N, OR (HOCH SUB2 CH SUB2) SUB3 N AT 80-90DEGREES FOR 6 HR GAVE THE CORRESPONDING QUATERNARY CHLORIDES, OBTAINED AS WAXY SOLIDS BY DRYING IN VACUO. SURFACE TENSIONS OF 1PERCENT SOLNS. WERE 40, 32, 32.5, AND 29.4 DYNES-CM, RESP. FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PREPARATION OF CATIONIC SURFACE ACTIVE AGENTS FROM A GAS CONDENSATE -U-

AUTHOR-(03)-ALIMOV, A.A., MAKHMUDOV, T.M., AKHMEDOV, K.S.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(2), 50-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SURFACE ACTIVE AGENT, CHLORINATED AROMATIC COMPOUND, PYRIDINE, TRIETHYLAMINE, CHLORIDE, SURFACE TENSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0917 STEP NO--UR/0291/70/014/002/0050/0052

CIRC ACCESSION NO--AP0137945

UNCLASSIFIED

USSR

ABDURASULEVA, A. R., et al., USSR Author's Certificate No 327150, filed 28 May 70, published 16 Mar 72

m.p. 59°C (benzene), 4-benzylresorcinol, m.p. 78°C (benzene). From 15.5 g resorcinol methyl ether, 3.16 g $PhCH_2Cl$ and 0.0054 g $FeCl_3 \cdot 12H_2O$ 4.9 g of mixture is obtained, b.p. 157-160°C/2, $n^{20}D$ 1,5923, containing 21% $2\text{-}PhCH_2\text{-}3\text{-}MeOC_6H_3OH$, m.p. 77°C (hexane), 36% $4\text{-}PhCH_2\text{-}3\text{-}MeOC_6H_3OH$, m.p. 51°C (hexane), 43% $6\text{-}PhCH_2\text{-}3MeOC_6H_3OH$, m.p. 43°C. A heating of a mixture consisting of 27.6 g dimethyl ether of resorcin, 2.53 g $PhCH_2Cl$ and 0.052 g $FeCl_3 \cdot 12H_2O$ at 110-130°C for 30 min. yields 4.2 of substance, b.p. 146-147°C/2, $n^{20}D$ 1,5763, which contains according to gas-liquid chromatography 27% $2\text{-}PhCH_2\text{-}1,3\text{-}(MeO)_2C_6H_3$ and 73% $4\text{-}PhCH_2\text{-}1,3\text{-}(MeO)_2C_6H_3$.

2/2

USSR UDC 632.95

ABDURASULEVA, A. R., AKHMEDOV, K. N., YUSUPOV, A., and TADZHIMUKHAMEDOV, Kh. S., Tashkent University

"Synthesis of Benzylphenols or Benzylresorcinols and Their Methyl Ethers"

USSR Author's Certificate No 327150, filed 28 May 70, published 16 Mar 72, (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom (I, L-S), No 1(II), 1973, Abstract No 1N480P by T. A. Belyayeva)

Translation: Benzylphenols, benzylresorcinols and their methyl ethers which can be used as bactericides, fungicides, or antihelminths, are synthesized from phenols and resorcinols in the reaction with $PhCH_2Cl$ during heating in the presence of $FeCl_3 \cdot 12H_2O$. Example: A mixture consisting of 23 g PhOH, 6.33 g $PhCh_2Cl$ and 0.0076 g $FeCl_3 \cdot 12H_2O$ is heated at 100-110°C for 20 min., excess of PhOH is removed by distillation at 10-15 mm pressure, the residue is redistilled, and fractions are collected at 135-142°C/2. The resulting 8 g mixture contains 58% o-$PhCH_2C_6H_4OH$, b.p. 130-131°C/1, and 42% p-$PhCH_2C_6H_4OH$, m.p. 83-84°C (CCl_4). In a similar way another mixture is prepared, b.p. 140-145°C/2, consisting of 44.6% o-$PhCH_2C_6H_4OMe$, m.p. 30-31°C (diluted alcohol) and 55.4% p-$PhCH_2C_6H_4OM_e$, b.p. 154-155°C/4. Chromatographic analysis (Al_2O_3) showed the presence of: 2-benzylresorcinol,

USSR

UDC:553.982.2(575.15)

AKRAMKHODZHAYEV, A. M., ERGASHEV, K. A., AKHMEDOV, Kh. A., OGAY, V. F., BAZARBAYEV, E. G., Tashkent, Uzbekskiy Geologicheskiy Zhurnal, No. 6, 1970, pp. 15-19

regional -- migration from the deeper portion of the oil and gas forming area throughout the entire history of geological development of the structural plan, i. e. both before and after the morphological formation of the structural forms.

2/2

USSR UDC:553.982.2(575.15)

AKRAMKHODZHAYEV, A. M., ERGASHEV, K. A., AKHMEDOV, Kh. A., OGAY, V. F., BAZARBAYEV, E. G.

"Evaluation of Prospects for Oil and Gas Content of Eastern Portion of Fergana Depression in the Light of New Data"

Tashkent, Uzbekskiy Geologicheskiy Zhurnal, No. 6, 1970, pp. 15-19

Abstract: In spite of the significant number of prospecting operations which have been conducted over the past decade in the Fergana depression, the prospects for oil and gas finds in the eastern portion of this depression have not yet been properly evaluated. This article presents a description of the Suzakskaya structure, which has been a judged promising. Based on the description presented, it is concluded that the formation of the overwhelming majority of oil and gas deposits in this region has occurred primarily due to migration of hydrocarbons from oil and gas conducting suites into collectors within formations, as well as due to lateral --

USSR UDC 534.86

AKHMEDOV, I. A.

"On the Modeling of a Sheet Reverberator"

Tr. Uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of the Educational Institutes of Communication. Ministry of Communication USSR), 1971, No. 53, pp 167-172 (from RZh-Fizika, No 3, Mar 72, Abstract No 3Zh562)

Translation: Problems of the miniaturization and modeling of a sheet reverberator are discussed. It is shown that in order to retain a fixed structure of the spectrum of the natural frequencies under a decrease in the plate area, it is necessary to reduce the thickness by several factors. A formula is given for calculating the spectral density of the natural frequencies under a change in the material and the linear dimensions of the plate. The spectral density of the natural frequencies of a model of a sheet reverberator is calculated for a modeling scale of 1:5. The results of an experimental study of a model of a small-scale sheet reverberator in which a nickel rectangular plate of dimensions 0.08 × 150 × 270 mm is used are given. Resume.

1/1

2/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105108

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CARBOXYPEPTIDASE A RELEASED LEUCINE, PHENYLALANINE, AND TYROSINE FROM YEAST INORG. PYROPHOSPHATASE AFTER A 30 MIN INCUBATION, ALANINE AFTER 1 HR, ISOLEUCINE AND VALINE AFTER 2 HR AND THREONINE AND SERINE AFTER 4 HR, INDICATING THAT THE AMINO ACID PATTERN OF INORG. PYROPHOSPHATASE WAS (SER, THR)-(VAL,ILE)-ALA-TYR-PHE-LEU-OH. TWO MOLES OF AMINO ACIDS WERE CLEAVED-MOLE OF PROTEIN, INDICATING THAT THE MOL. OF INORG. PYROPHOSPHATASE CONSISTED OF AT LEAST 2 APPARENTLY IDENTICAL SUBUNITS.

FACILITY: LAB. BIOORG. CHEM., MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INTERACTION OF YEAST INORGANIC PYROPHOSPHATASE WITH CARBOXYPEPTIDASE A -U-

AUTHOR-(02)-AVAYEVA, S.M., AKHMEDOV, G.I.

A

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(1), 31-4

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPTIDE HYDROLASE, PHOSPHATASE, YEAST, AMINO ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0008 STEP NO--UR/0218/70/035/001/0031/0034

CIRC ACCESSION NO--AP0105108

UNCLASSIFIED

Rubber and Elastomers

USSR UDC 661.185.1

ASHIMOV, M. A., MURSALOVA, M. A., SADYKH-ZADE, S. I., and AKHMEDOV, G. G.,
Sumgait Branch INKhT, Acad. Sc., AzerbSSR

"Study of the Utilization of Biodegradable Alkylarylsulfonate INKhP-9 as an Emulsifier During Production of Butadiene-nitrile Rubber"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 1 (73), 1971, pp 64-66

Abstract: The copolymerization of butadiene and acrylonitrile was studied as a function of the amount of a new biodegradable emulsifier INKhP-9 used and of the reaction time. INKhP-9 is the sodium salt of a mixture of 75-78% of mono-, 15-18% of the di- and 4-10% of the trialkylaranesulfonic acids obtained by alkylation of benzene with normal- α-olefines containing 6-14 carbon atoms in presence of $AlCl_3$ or H_2SO_4. Increasing the amount of INKhP-9 from 2.2 parts by weight·hr to 3.8 and 4.2 results in 82, 77, and 65% copolymerization in 8 hrs respectively. However, the latex obtained with the lowest level of INKhP-9 is not stable. The higher concentrations of INKhP-9 give a sufficiently rapid process and a stable latex product which compares favorably with the commercially produced rubber SKN-26.

1/1

USSR

AKHMEDOV, E. G., V sb. Magnit. elementy pamyati, Moscow, "Nauka", 1972, pp 81-88

improving the signal/noise ratio are considered. Original article: three illustrations, two tables, and four bibliographic entries. Resume.

2/2

USSR UDC 534.852

AKHMEDOV, E. G.

"Studying the Relationship Between Signal and Noise During Optical Reading by Means of Magnetic Recording"

V sb. Magnit. elementy pamyati (Magnetic Memory Elements -- collection of works), Moscow, "Nauka", 1972, pp 81-88 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 V82)

Translation: Reproduction of magnetic recording with the aid of the Kerr effect has many advantages. The magnitude of the signal with respect to this method is determined by the intensity of magnetization and not by magnetic flux and the rate of its change. Since the reproduction is carried out by a light beam, the thickness of the working layer can be $\sim$0.1 micron or less. The monochromatic light beam can be focused on a spot with a diameter of one order of magnitude of the wave length. Therefore, it is possible to reproduce the recording from a $\sim$ 1 micron area, i.e. recording density can be reduced to 10^8 bits/cm^2. One of the major difficulties in the production of reliable, magneto-optic memory units is the small value of the magneto-optic Kerr effect which is normally $\leqslant 0.1^\circ$. This makes it difficult to obtain sufficiently high values for the signal/noise ratio. Results are given from the theoretical and experimental studies of the signal/noise ratio. It is shown that the use of film type polarizers instead of calcite polarizing prisms does not have a significant effect on the signal/noise ratio. Various methods for

USSR UDC 662.611

AKIMOV, D. B., LORYSHEV, V. A., PO ARTISL , V. V.

"Investigation of the Flame-Propagation Equations and Determination of the Total Kinetic Combustion Constants"

Trudy Leningradskogo Politekhnicheskogo Instituta (Works of the Leningrad Polytechnical Institute), No 316, 1970, pp 89-95 (From Referativnyy Zhurnal, Teploenergetika, No 1, 1971, Abstract No 1R42)

Translation: Calculation expressions are obtained for the determination of basic combustion characteristics. The formula for determining the relationship of the rate of flame propagation to the conditions of heat removal agrees well with the formula for determination of the critical conditions of flame propagation. On the basis of this formula, a correction may be introduced for nonadiabaticity of the process when investigating the values of the total kinetic combustion constants. When experimentally determined values of the normal flame-propagation rate are used, a formula is proposed for determining the total kinetic combustion constants. 3 figures, 2 tables. 7 bibliographic entries.

1/1

USSR

AKHMEDOV, B. K. and BOYKO, I. B., Department of Nutrition, Uzbek Scientific Research Institute of Sanitation, Hygiene, and Occupational Diseases

"Primary Toxicological Characteristics of Sumithion"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 5, 1971, p 34

Abstract: Experiments on mice and rats given the organophosphorus insecticide sumithion orally showed that the lethal doses are the following: for rats, the MLD was 500 mg/kg, LD_{50} 837.5 (756-919), LD_{100} 1750; for mice, 100, 768 (693-843), and 1300, respectively. Mice were somewhat more sensitive than rats. The clinical symptoms of poisoning with a single toxic dose of sumithion were similar to those observed in poisonings with other organophosphorus insecticides. Initial manifestations of intoxication appeared within 5 to 15 min and were marked by motor excitement for 10 to 15 min, which was followed by inhibition. The animals became untidy and disheveled. They salivated and urinated frequently. Death set in from 1 to 5 days after ingestion of the compound.

1/1

USSR

AKHMEDOV, A. M., Sal'monellezy (Paratify) Molodnyaka (Salmonella Infection (Paratyphus) in Young Animals), Moscow, "Kolos," 1971, 256 pp

CSO: 1840-W

- END -

USSR

AKHMEDOV, A. M., Sal'monellezy (Paratify) Molodnyaka (Salmonella Infections (Paratyphus) in Young Animals), Moscow, "Kolos," 1971, 256 pp

4/5

USSR

AKHMEDOV, A. M., Sal'monellezy (Paratify) Molodnyaka (Salmonella Infections (Paratyphus) in Young Animals), Moscow, "Kolos," 1971, 256 pp

USSR

AKHMEDOV, A. M., Sal'monellezy (Paratify) Molodnyaka (Salmonella Infections (Paratyphus) in Young Animals), Moscow, "Kolos," 1971, 256 pp

2/5

USSR UDC 619:616.981.49]:636.082.35

AKHMEDOV, A. M., Professor, Doctor of Veterinary and Biological Sciences

Sal'monellezy (Paratify) Molodnyaka (Salmonella Infections (Paratyphus) in Young Animals), Moscow, "Kolos," 1971, 256 pp

Translation: Annotation: The Salmonella bacteria are an extensive group of intestinal bacteria, fairly resistant in an external environment, which cause disease in young cattle, sheep, pigs, and horses. The forms of disease vary from severe to chronic; they frequently end in the animal's death.

The book presents: a description of Salmonella strain and their properties; the epizootiology, pathogenesis, and clinical picture by types of animals; pathological changes, diagnosis and differentiation from other diseases, and immunity. In separate sections, the questions of treatment, specific prevention, and steps to combat Salmonella infections are treated. Sanitary epidemiological evaluations of infections are given.

Table of Contents:

1/5

USSR UDC 539.374

AKHMEDIYEV, N. N., Moscow Aviation Technological Institute

"Stress and Plastic Deformation Kinetics of Continuously Strain Hardened Material by Stable Symmetrical Loading"

Kiyev, Problemy Prochnosti, No. 9, Sep 71, pp 12 -14

Abstract : It is analytically demonstrated that stress dependences on deformations resulting from the model of a micro-heterogeneous and elastically yielding medium, previously suggested by the author (Ibid., No.7, 1971), are considerably simplified if the cyclic loading is characterized by a symmetrical deformation amplitude of the cycle. From derived approximation functions of half-cycles of loading, magnitudes of the mean range of plastic deformation per N cycles and the limiting steady range, determinable by the beginning stabilization of the hysteresis loop, were established. It is shown that by the derived functions the destructive number of cycles can easily be calculated from the Coffin-Manson equation. Twenty three formulas, three biblio. refs.

1/1

USSR

UDC 577.1:615.7/9

KOLOSOVA, T. S., TIUNOV, L. A., KUSTOV, V. V., IVANOVA, L. V., VASIL'EV, G. A. LEMESH, G. A., and AKHMATOVA, M. A.

"Toxic Effect of Gaseous Products of the Organism's Vital Activity"

V sb. Probl. kosmich. biol. (Problems in Space Biology -- Collection of Works), Vol 16, Moscow, "Nauka," (Science), 1971, pp 182-190 (Russian) (from RZh-Biologicheskaya Khimiya, No 20, 25 Oct 71, Abstract No 20F1687 from summary)

Translation: Rats were kept for 26 days in metal airtight chambers with automatic O_2 supply and CO_2 excess removal. It was established that the complex of gaseous substances given off by the organism causes lung tissue damage and anemia, increases oxygen consumption and the weight of the thyroid gland, and alters blood catalase activity.

1/1

USSR

TIUNOV, L. A., et al., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 11, 1972, pp 1756-1759

cytochromes, also contribute certain amounts of CO. However, the ratio of CO produced over hemoglobin catabolized is so constant that measurements of CO concentration in exhaled air can be used as an indirect method of determining erythrokinetics.

2/2

UDC 612.26

USSR

TIUNOV, L. A., KHIORIN, A. I., KOLOSOVA, T. S., IVANNIKOV, Yu. G., and AKHMATOVA, M. A., Leningrad

"The Causes of Differences in Carbon Monoxide Concentration in Exhaled Air in Man"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 11, 1972, pp 1756-1759

Abstract: In man, carbon monoxide concentration in exhaled air normally varies from 2.8 to 25 mg/m^3. It increases with increasing erythrocyte concentration. For example, when erythrocyte concentration is 4.71 million/mm^3, the average CO concentration is 9.6 mg/m^3 of exhaled air, and when the RBC count is 5.34 million/mm^3, CO concentration is 22.9 mg/m^3. On the other hand, the concentration of catalase in the erythrocytes decreases with increasing hemoglobin concentration in blood; and with decreasing catalase, hemoglobin catabolism increases. The CO molecule is formed through incomplete oxidation of the carbon atom in the alphamethylene bridge in the tetrapyrrole ring. Thus, CO production is proportional to hemoglobin catabolism, and it increases in hemolysis. Since 1.27 units of CO are produced for one equivalent unit of hemoglobin catabolized, other hem-containing compounds, such as myoglobin and

1/2

A

A N0012142

UR 9013

AUTHOR-- AKHMATOV, S., CORRESPONDENT

NEWSPAPER-- PRAVDA UKRAINY, JANUARY 10, 1970, P 1, COLS 1-4, AND P 2, COLS 2-4

ABSTRACT-- THE ARTICLE IS A BRIEF BIOGRAPHICAL PROFILE OF ZOT IL,ICH NEKRASOV, DIRECTOR OF THE DNEPROPETROVSK INSTITUTE OF FERROUS METALLURGY /APPOINTED IN 1952/, LAUREATE OF THE LENIN AND STATE PRIZES, HERO OF THE SOVIET UNION AND MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES. HE WAS ELECTED CORRESPONDING MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES IN 1951. IT WAS ON HIS SUGGESTION THAT THE INSTITUTE OF FERROUS METALLURGY WAS RELOCATED FROM KIYEV TO DNEPROPETROVSK WHERE ITS STAFF GREW TO 1,200 PEOPLE. IN ADDITION TO BEING DIRECTOR OF THE INSTITUTE, NEKRASOV HEADS THE DEPARTMENT OF IRON METALLURGY. A. P. CHEKMAREV, K. F. STARODUBOV, V. D. CHEKHRANOV, I. G. UZLOV, A. V. PRAZDNIKOV, AND YU. N. TARAN ARE MENTIONED AS HIS COLLEAGUES.

1/1

18

19570971

USSR

AKHMATOV, A. S., UCHUVATKIN, G. N.

"Study of the Interaction of Metals with Boundary Friction"

Poverkhnost. Sily v Tonkikh Plenkakh i Dispers. Sistemakh [Surface Forces and Thin Films and Dispersed Systems -- Collection of Works], Moscow, Nauka Press, 1972, pp 307-316, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 A80, by the authors).

Translation: The specific attractive forces P_m of 12 different metals are measured. It is shown that as the lubricant layer thickness in H increases from $2 \cdot 10^{-8}$ to $1.3 \cdot 10^{-7}$ m, the value of P_m decreases according to the rule $P_m = KH^{-4}$. It is shown that under boundary friction conditions with metals, in addition to the short-radius attractive and repulsive forces, forces of relatively large radius of action are also felt. A correlation is determined between P_m and the work function of the metals studied, as well as between P_m and the coefficient of elasticity of the friction contact. 9 Biblio. Refs.

1/1

USSR

UDC 621.375.82

AKHMANOV, S. A., D'YAKOV, Yu. Ye.

"Parametric Amplification in a Noise Pumping Field"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 346-353 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D887)

Translation: A theoretical study was made of the effect of the nonmonochromaticity of a pumping field on the parametric amplification of the waves in a medium with quadratic nonlinearity under conditions in which the length of the amplification region $L >> \ell_0$ -- the characteristic length of the parametric amplification ($\ell_0 = 1/\Delta\nu_0\Delta n$, where $\Delta\nu_p$ is the width of the pumping spectrum, Δn is the group detuning of the interaction waves). Under conditions in which $\Delta\nu_p$ exceeds the threshold value $\Delta\nu_{thresh}$, the parametric amplification will depend on the spectral pumping density. The increment of the signal wave in this case is proportional to the spectral density of pumping and inversely proportional to the dispersion of the group pumping rates and the free wave. Evaluation of $\Delta\nu_{thresh}$ indicates that $\Delta\nu_{thresh}$ increases with an increase in spectral density of the pumping. It is indicated that parametric processes with sufficiently powerful incoherent sources with high spectral density can take place with an efficiency not less than the efficiency in the case of a coherent pumping source.

1/1

USSR

AKHMANOV, S. A., et al., Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 3-16

amplification of the first Stokes component. In the absence of group synchrony and in the presence of inverse induced Raman emission, the formation of gigantic first Stokes component pulses is possible with a power exceeding its pumping power and a duration $\tau_c = 2T_2/\gamma_0\delta^{-1} - 1$, where T_2 is the transverse relaxation time, γ_0 is the stationary amplification coefficient, δ is the linear loss coefficient. The shift of the level populations in the medium was analyzed. Prospective problems were indicated for further study: in particular, consideration of nonuniform broadening of the levels, analysis of resonance induced Raman emission in equilibrium and excited media, and so on. The bibliography has 34 entries.

2/2

USSR

UDC 621.375.82

AKHMANOV, S. A., DRABOVICH, K. N., SUKHORUKOV, A. P., SHCHEDNOVA, A. K.

"Combined Effects of Molecular Relaxation and Dispersion of the Medium in the Case of Induced Scattering of Supershort Light Pulses"

V sb. Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 3-16 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D865)

Translation: A theoretical analysis was made of the effect of the local nonstationarity and dispersion of a medium on the development of the pulse of the first Stokes component of induced Raman emission excited by picosecond pulses of laser radiation as a function of the relation between their duration and the longitudinal and transverse relaxation times of the medium. It is demonstrated that under conditions of group synchrony the pulse buildup coefficient of the first Stokes component can be reduced by comparison with the stationary value; in the case of strong nonstationarity, broadening of the spectrum is possible, and the phase modulation of the pumping radiation has no effect on the amplification. In media with anomalous dispersion in the case of inverse induced Raman emission the amplification saturation always takes place on a quasistationary length. The phase modulation of the pumping radiation in the dispersing medium can have a significant effect on the

1/2

USSR UDC 621.375.82

AKHMANOV, S. A., ORLOV, R. Yu., SKIDAN, I. B., TELEGIN, I. S.

"Picosecond Pulses in the Ultraviolet Band"

V sb. Nelineyn. protsessy v optike. (Nonlinear Processes in Optics-- collection of works), Vyp. 2, Novosibirsk, 1972, pp 27-34 (from RZh-Fizika, No 12, Dec 72, Abstract No 21D869)

Translation: An experimental study was made of self-focusing and induced Raman emission in liquid nitrogen of picosecond radiation pulses with a power to 10^7 watts and a mean wavelength of $\lambda = 0.26$ microns. The pulses are obtained as a result of transformation of the radiation generated by a neodymium glass laser in the synchronization mode into the fourth harmonic. The laser radiation comprised 15-20 pulses 3-4 picoseconds in duration with a power of $3 \cdot 10^9$ watts. The efficiency of conversion into the fourth harmonic in the system made up of the generator with a core 24 cm long and 2 series frequency doublers was 1-2%. The high-power stability of the fourth harmonic was noted. This was achieved with difficulty in the nanosecond pulse mode. The induced Raman emission threshold was reached for a fourth harmonic pulse power of 10^6 watts. The self-focusing and anomalous broadening of the pulse spectrum, the mechanism of which has been inadequately investigated, were also observedin a number of experiments. The bibliography has 9 entries.

1/1

USSR

AKHMANOV, S. A., et al, Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki, No. 11, 5 Dec 70, pp 547-551

investigated previously. The experiments on induced Raman scattering in self-focusing media were made with the second harmonic of a neodymium laser in single-mode and synchronization mode operation. Anomalous broadening of the spectrum reaching 1000 cm^{-1} in nanosecond pulses and more than 1000 cm^{-1} in picosecond pulses were observed in carbon bisulfide in a collimated beam. It is shown that the broadening of the spectrum of picosecond pulses in these experiments was directly associated with phase self-modulation of the pulse in a nonlinear medium.

2/2

Optics and Spectroscopy

USSR

AKHMANOV, S. A., KOL'SHOV, M. A., DRABOVICH, K. N., SUKHORUKOV, A. P., Physics Faculty of Moscow State University imeni M. V. Lomonosov

"Suppression of Induced Raman Scattering in Dispersive Media With a Nonlinear Refractive Index"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, No. 11, 5 Dec 70, pp 547-551

Abstract: A theoretical and experimental study of induced Raman scattering of intense picosecond and nanosecond light pulses in self-focusing liquids is presented. The anomalous broadening of the pulse spectra caused by the nonlinearity of the refractive index is accompanied by a considerable decrease in the intensity of the induced Raman scattering and, in many cases, to its complete suppression. It was established that this effect is caused by the simultaneous action of fast phase modulation of the pumping arising due to nonlinearity of the medium and of dispersion of the medium. A generalization of the nonstationary theory of induced Raman scattering yielded quantitative relationships for this mode which had not been

USSR

AKHMANOV, S. A., KOVRIGIN, A. I., MAKSIMOV, S. A., and OGLUZDIN, V. YE., Moscow State University imeni M. V. Lomonosov

"Dispersion of Resonant Nonlinear Susceptibility in Potassium Vapors"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 186-191

Abstract: The article describes results of an experimental study of the dispersion of nonlinear susceptibility of potassium vapors near the transitions $4S_{1/2} - 4P_{3/2}$ ($\nu_{01} = 13043\ cm^{-1}$) and $4S_{1/2} - 4P_{1/2}$ ($\nu_{02} = 12985\ cm^{-1}$). The use of a frequency-tunable, high-power pulse, parametric light oscillator as the source for the observation of self-modulation, self-focusing, and self-defocusing effects made it possible for the first time to trace the dispersion of the modulus and sign of nonlinear susceptibility in the entire frequency range $\nu = \nu_{01}$, $\nu_{01} > \nu > \nu_{02}$, $\nu < \nu_{02}$. The strong effect of nonlinearity saturation and group velocity dispersions was pronounced in the experiments.

1/1

USSR

AKHMANOV, S. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 62, No 2, Feb 72, pp 525-540

pulses with a duration of $\tau_p < T_2$ at $z < l_{ny}$, accompanied by stabilization of the Stokes pulse shape and width. Another important effect is the suppression of IRE as a result of rapid pumping phase modulation (at $\gamma = 0$ phase modulation has practically no effect on Stokes amplification). There is correlation between the effect of stationary mode formation and IRE suppression due to phase modulation. Estimates show that these effects play an important role in the IRE of picosecond pulses in liquids and crystals and IRE in multimode beams. They may also appear in other types of stimulated scattering.

The theory developed can be used to analyze characteristics of fiber Stokes and anti-Stokes components in nonstationary scattering. An interesting question is nonstationary scattering by polaritons. The use of the correlation method described enabled A. G. GOLYER to establish that the measured line width of infrared vibrations under nonstationary conditions has the order of the corresponding spontaneous line width, regardless of the width of the pumping spectrum.

2/2

USSR

AKHMANOV, S. A., DMITRIYEV, K. N., SUKHORUKOV, A. P., and [illegible], A. N., Moscow State University imeni M. V. Lomonosov

"Combined Effects of Molecular Relaxation and Dispersion of Media in Induced Raman Emission of Ultrashort Light Pulses"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 62, No 2, Feb 72, pp 525-540

Abstract: The article develops a consistent nonstationary theory for induced Raman emission (IRE) which simultaneously considers the effect of molecular relaxation and dispersion of the medium. Broad generalizations are made with respect to pumping modulation (a short rectangular and a bell-shaped pulse without phase modulation, continuous phase-modulated pumping, short pulses experiencing rapid phase modulation). Different relations between the group velocities of interacting waves are considered (forward scattering in the case of normal and anomalous dispersion, backscattering). The most interesting result of the authors' analysis is the fact that, under conditions of dispersion of molecular vibrations and dispersion of the medium, qualitatively new effects arise. The most important [illegible] of a mode of exponential amplification of Stokes radiation [illegible] pulse.

1/2

USSR

AKHMANOV, S. A., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 5, 5 Mar 72, pp 266-269

stimulated Raman scattering in the UV region was measured in a parallel beam, and a difference was found in the character of the gain curves. Threshold pumping power values were measured for the Raman laser, as well as threshold pumping energies for stimulated Mandelstam-Brillouin backscattering in crystal and fused quartz. The frequency dependence of threshold characteristics and the character of the light breakdown in crystal and fused quartz and ADP were studied.

The authors thank A. Z. Grasyuk for providing the cryostat, and L. Pavlov and V. I. Kuznetsov for their assistance in the experiments.

2/2

USSR

AKHMANOV, S. A., ZHDANOV, B. V., KOVRIGIN, A. I., and PERSHIN, S. M., Moscow State University imeni M. V. Lomonosov

"Effective Stimulated Scattering in the Ultraviolet Region of the Spectrum and Variance in Gain in the 0.26-1.06-Micron Range"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 5, 5 Mar 72, pp 266-269

Abstract: Effective induced Raman emission and Mandelstam-Brillouin scattering were obtained in the UV region, and some characteristics of the two types of scattering were studied. An increase in Raman susceptibility in the UV region made it possible to create an effective Raman liquid-nitrogen laser with pumping at λ = 0.26 micron (at a pumping power of 10 kw in a system without mirrors it was possible to excite Stokes generation with an efficiency reaching dozens of percentage points). A marked increase in gain in the UV region was also recorded for stimulated Mandelstam-Brillouin scattering. The exciting radiation was obtained from a stable neodymium-laser, fourth-harmonic generator with one longitudinal and one transverse mode. The use of a cascaded system permitted simultaneous unimode radiation at λ_1 = 1.06 microns, λ_2 = 0.53 micron, λ_3 = 0.35 micron, and λ_4 = 0.26 micron. The gain factor for

2/2 063 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106221

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REVIEW OF DEVELOPMENTS IN A BRANCH OF MODERN OPTICS WHICH DEALS WITH LIGHT FROM LASER SOURCES I.E., WITH OPTICAL EFFECTS IN SOLIDS, GASES AND LIQUIDS WHICH ARE MODIFIED BY RADIATION POWER VARIATIONS. THE TOPICS COVERED INCLUDE SELF FOCUSING OF LIGHT, OPTICAL HARMONICS, SELF TRANSLUCIDATION, AND NONLINEAR ABSORPTION OF LIGHT. ALSO DISCUSSED ARE THE FUNDAMENTALS OF ADVANCED NONLINEAR OPTICS, LASER APPLICATIONS, AND NONLINEAR OPTICAL DEVICES USED IN SPECTROSCOPY. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

1/2 063 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--NONLINEAR OPTICS -U-

AUTHOR--AKHMANOV, S.A.

A

COUNTRY OF INFO--USSR

SOURCE--PRIRODA, NO. 3, 1970, P. 32-41

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NONLINEAR OPTICS, LASER OPTICS, LIGHT ABSORPTION, HARMONIC OSCILLATION, LASER APPLICATION, BIBLIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1465 STEP NO--UR/0026/70/000/003/0032/0041

CIRC ACCESSION NO--AP0106221

UNCLASSIFIED

USSR

AKHMANOV, S. A., ORLOV, R. Yu., SKIDAN, I. B., and TELEGIN, L. S.

"Formation of Subpicosecond Pulses in the Ultraviolet Range by Multiple Nonlinear Transformations"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 16, No 8, 20 October 1972, pp 471-475

Abstract: This article describes an oscillator of ultrashort pulses in the wavelength range of 0.26 to 0.28 microns, with the pulses having a width of less than $0.5 \cdot 10^{-12}$ seconds and a power of approximately 10 MW. To generate these pulses, the radiation frequency of a picosecond laser using glass with Nd^{3+} was twice doubled. The basic advantage of the method described in this letter is the improvement in the pulse-train structure that can be achieved in the process of multiple nonlinear transformations. A diagram of the experimental apparatus consisting of a picosecond pulse oscillator using LGS-1 glass and two frequency doublers, is given. The pulses thus produced can be used as pumping sources for ultraviolet lasers for determining the relaxation time of electronic levels and for investigating nonstationary, nonlinear effects. The authors are connected with the M. V. Lomonosov State University of Moscow.
1/1

USSR

AKHMANOV, S. A. and D'YAKOV, YU. YE., Moscow State University imeni M. V. Lomonosov

"Saturation Effects During the Induced Raman Emission and Resonant Absorption (Intensification) of a Strong Nonmonochromatic Field"

Moscow, Pis'ma v (Letters to) Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 20 October 1973, pp 519-522

Abstract: Consideration is given to induced Raman emission in a field of strong optical noise, with account taken of saturation effects. There is a discussion of a new mode of intense transfer of the energy of wide-band pumping light into a harmonic Stokes signal. For an analysis of the nonlinear effects originating with the interaction of noncoherent light with quantum systems, an approach is proposed which is analogous to the Dyson-equation technique in the theory of waves in turbulent media, generalized for nonlinear problems. 1 figure, 11 references.

1/1

USSR

AKHMANOV, S. A. and LYAKHOV, G. A., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, January 1974, pp 96-107

feedback due to inhomogeneous depletion of an inverse population was also analyzed.

The article includes 40 equations and four figures. There are 19 references.

USSR

AKHMANOV, S. A., LYAKHOV, G. A. (Moscow State University)

"Optical Pumping Inhomogeneity Effects in Lasers and in Induced Emission. Self-Excitation Due to Distributed Feedback"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; January 1974, pp 96-107

Abstract: Inhomogeneity of the pumping is the cause of distributed feedback arising in amplifying systems with laser pumping. A theory is developed for coherent distributed feedback in a three-level laser with inhomogeneous pumping. The self-excitation threshold is determined, and the role of spatial harmonics of inverse population modulation is analyzed. Distributed feedback effects due to pumping inhomogeneity appear also in induced Raman emission. Conditions for self-excitation of a Raman laser with coherent distributed feedback are determined; the stationary nonlinear mode is discussed. Conditions are found for the appearance of induced Raman emission instability related to distributed feedback which may arise as a result of weak pumping reflections. The instability thresholds due to coherent distributed feedback in amplifying systems are compared with those due to stochastic distributed feedback related to random pumping inhomogeneity or to thermodynamic density fluctuations. Distributed 1/2

USSR

AKHMANOV, S. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, February 1974, pp 520-536

by studying induced Raman emission in liquid nitrogen excited by a wide-band optical noise source. The possibility of obtaining effective scattering in an essentially nonquasistatic mode (for $\tau_k \ll T_2$, $\tau_k \ll T_3$) is demonstrated. Spectral and energy measurements are performed which are compared with theory. The results can be employed for analyzing various types of scattering and such problems as decay instabilities in a plasma, etc.

USSR

AKHMANOV, S. A., D'YAKOV, Yu. Ye., PAVLOV, L. I. (Moscow State University)

"Statistical Phenomena in Stimulated Raman Emission Excited by Broad-Band Optical Pumping"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, February 1974, pp 520-536

Abstract: Results of a theoretical and experimental investigation of stimulated scattering in the field of an optical noise pump are presented. A complete theoretical description of the phenomenon is presented in the approximation of a prescribed Gaussian noise pumping field. Coherent and incoherent scattering modes and the transition region between them are investigated in detail. The increments, correlation functions, and Stokes radiation and optical phonon spectra are calculated for arbitrary relations between the pumping correlation time (τ_k), dephasing time T_2, and characteristic group delay time T_3. It is shown that in many cases of practical interest noise pumping may be at least as effective as harmonic pumping with the same mean intensity. The feasibility of generation of very monochromatic optical phonons (spectral line width $\Delta\nu_Q \ll \Delta\nu_Q = (\pi cT_2)^{-1}$) in an optical noise field is noted. The theoretical conclusions are verified experimentally
1/2

2/2 02C UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0127988

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DOCA ADMINISTERED FOR 2 WEEKS POSTOPERATIVE DECREASED THE RENAL RNA CONTENT OF ADRENALECTOMIZED RATS TO A LESS EXTENT THAN IN UNTREATED ADRENALECTOMIZED RATS. CHANGES IN THE CHEM. COMPONENTS OF THE KIDNEY CELLS OF ADRENALECTOMIZED RATS ARE PROBALY DUE TO THE ABSENCE OF GLUCOCORTICOIDS AS WELL AS TO THE ABSENCE OF MINERALOCORTICOIDS. FACILITY: INST. BIOKHIM., TASHKENT, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--HISTOCHEMICAL FEATURES OF THE KIDNEYS OF ADRENALECTOMIZED ANIMALS FOLLOWING ADMINISTRATION OF DOCA DECXYCORTICOSTERONE ACETATE -U-

AUTHOR-(04)-ZUFAROV, K.A., KHAMIDOV, D.KH., AKHMADZHANOVA, M.M., KUZNETSOVA, L.G.

COUNTRY OF INFO--USSR

A

SOURCE--UZB. BIOL. ZH. 1970, 14(2), 70-1

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HISTOCHEMISTRY, CORTICOSTEROID, KIDNEY, RNA, RAT, ADRENAL GLAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0417 STEP NO--UR/9079/70/014/002/0070/0071

CIRC ACCESSION NO--AP0127988

UNCLASSIFIED

USSR

UDC: 533.666.6+533.69.043

Akhmadulin, R. N.

"Optimization of Wing Parameters of a Glider"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 1, 1972, pp 5-13.

Abstract: A method is suggested for calculating the parameters of the wing of a glider to produce the minimum inductive drag factor for a given wing span, both in spiral and in level flight. The comparability of wingspan to spiral radius and unevenness of the field of velocities in an ascending flow are considered in spiral flight.

1/1

USSR

AKHMADOV, A. A.-B., and PRONENKO, V. P., Ukr. resp. nauch.-tekhn. konf., posvyashch. 50-letiyu metrol. sluzhby USSR, 1972, pp 145-146

equal to 3.2×10^{-5} radians. On the basis of this range of phase shift the precision phase indicaters, two-phase generators and other phase indicating devices may be constructed. The repeated sequential conversion of frequencies with recovery of generator frequency makes it possible to transfer the phase difference, set in a wide frequency range, to a fixed heterodyne frequency, that is to realize a wide-range frequency converter with retention of the phase relationship of the output signals, the phase error of which, as in the previous case, does not exceed lambda$_1$ lambda$_2$ radians. This frequency converter, in combination with a precision phase indicator, operation on a fixed frequency, makes it possible to perform measurements in a wide range of frequencies with high accuracy and to exclude the heterodyne tuning during this operation.

2/2

USSR UDC 621.317.77.3.088

AKHMADOV, A. A.-B., and PRONENKO, V. P.

"Error Analysis of Phase Indicator Devices With Repeated Sequential Conversion of Frequencies"

Khar'kov, Ukr. resp. nauch.-tekhn. konf., posvyashch. 50-letiyu metrol. sluzhby USSR, 1972 (Ukrainian Republic Scientific-Technological Conference, Dedicated to the 50th Anniversary of Metrological Services of the USSR, 1972) 1972, pp 145-146 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 1, 1973, Abstract No 1.32.1200)

Translation: Repeated sequential conversion of frequencies with recovery of the frequency of the input signal makes it possible to construct a wide-range phase-shifter with an error not exceeding the value of the absolute error (using in it a one-frequency reconstructed measure of phase shift) more than that for delta phi = lambda$_1$lambda$_2$ radians (where lambda$_1$ and lambda$_2$ are coefficients of suppression of the second side frequency of the first and second range phase displacement RPD devices). Electronic, dynamoelectric and other wide-range modulaters may be effectively used as an RPD. Technically, it is relatively easy to realize an RPD with lambda equal to or greater than 45 revolutions and correspondingly delta phi approximately

1/2

USSR

UDC 546.193'131

NISEL'SON, L. A., TRET'YAKOVA, K. V., and AKHMADEYEV, V. YA., State Scientific Research and Development Institute of Rare Earth Metal Industry

"The Liquid-Vapor Equilibrium in the Systems Formed by Arsenic Trichloride With Some Sulfur and Phosphorus Containing Admixtures"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 18, No 4, Apr 73, pp 1092-1097

Abstract: The liquid-vapor equilibrium was studied ebuliometrically in the systems formed by $AsCl_3$ with $SOCl_2$, SO_2Cl_2, $PSCl_3$ and $POCl_3$. Using the method of simple equilibrium distillation, relative volatilities have been refined for the area of pure $AsCl_3$. It has been established that $POCl_3$ and $PSCl_3$ ($\alpha POCl_3/AsCl_3 = 1.1$ and $\alpha PSCl_3/AsCl_3 = 1.5$ at 760 mm Hg) are the most difficult of the admixtures to remove by fractional distillation. The density of binary mixtures has been determined as a function of temperature. The correspondence between the type of the systems studied and the degree of deviation from Raoul law and the molar volumes of the mixtures from the additive rule have been confirmed.

1/1

2/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132295

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MEASURED DISPLACEMENT OF A DIVIDED INDEX ON A SPECIALLY CONSTRUCTED DEVICE HAS BEEN USED TO DET. THE COEFF. OF DISSUION (D) AND FOLLOWING THE PROCESS OF DIFFUSION BY A SERIES OF AQ. SOLNS. OF SURFACE ACTIVE AGENTS (PAV) INTO DISTD. H SUB2 O AT CONCNS. OF 0.2 TO 1PERCENT AND A TEMP. OF 20DEGREES. THE PAV EXAMD. WERE: OP-7 (I) AND OP-10 (II) (C SUB8 H SUB17 C SUB6 H SUB4 O(CH SUB2 CH SUB2, O) SUB10); 44-11 (III), AND 44-22 (IV) (H(CH SUB2 CH SUB2 O) SUBX (CH MINUS CH SUB2 O) SUBN (CH SUB2 MINUS CH SUB2 O) SUBY H; AND OZHK (V) (ME(CH SUB2) SUBN CO SUB2 (CH SUB2 CH SUB2 O) SUBX H). THE SPECIAL CONSTRUCTION PERMITTED THE IMMEDIATE ACQUISITION OF NUMERICAL DATA WITHOUT PHOTOGRAPHY AND STANDARDIZATION. MICELLE FORMATION INTERFERED WITH DIFFUSION AT HIGHER CONCNS. OF ALL THE PAV AND A CHARACTERISTIC DECREASE IN D WAS OBSD. AT HIGHER CONCNS. THE HIGHEST D WAS OBTAINED WITH III. IV WAS SOMEWHAT LOWER AND CHANGED LESS OVER THE CONCN. RANGE. STILL LOWER D VALUES WERE OBSD. FOR I AND II AND THEIR D VALUES ALMOST COINCIDED AT HIGHER CONCNS. A VERY SMALL D WAS OBTAINED FOR V. FACILITY: UFIM. NEFT. NAUCH.-ISSLED. INST., UFA, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--MEASUREMENT OF THE DIFFUSION OF COLLOIDAL SURFACE ACTIVE AGENTS -U-

AUTHOR-(02)-AKHMADEYEV, M.KH., BABALYAN, G.A.

A

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 277-80

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SURFACE ACTIVE AGENT, AQUEOUS SOLUTION, MEASUREMENT, PHYSICAL DIFFUSION/(U)PAV SURFACE ACTIVE AGENT, (U)OP7 SURFACE ACTIVE AGENT, (U)44 11 SURFACE ACTIVE AGENT, (U)44 22 SURFACE ACTIVE AGENT, (U)OZHK SURFACE ACTIVE AGENT

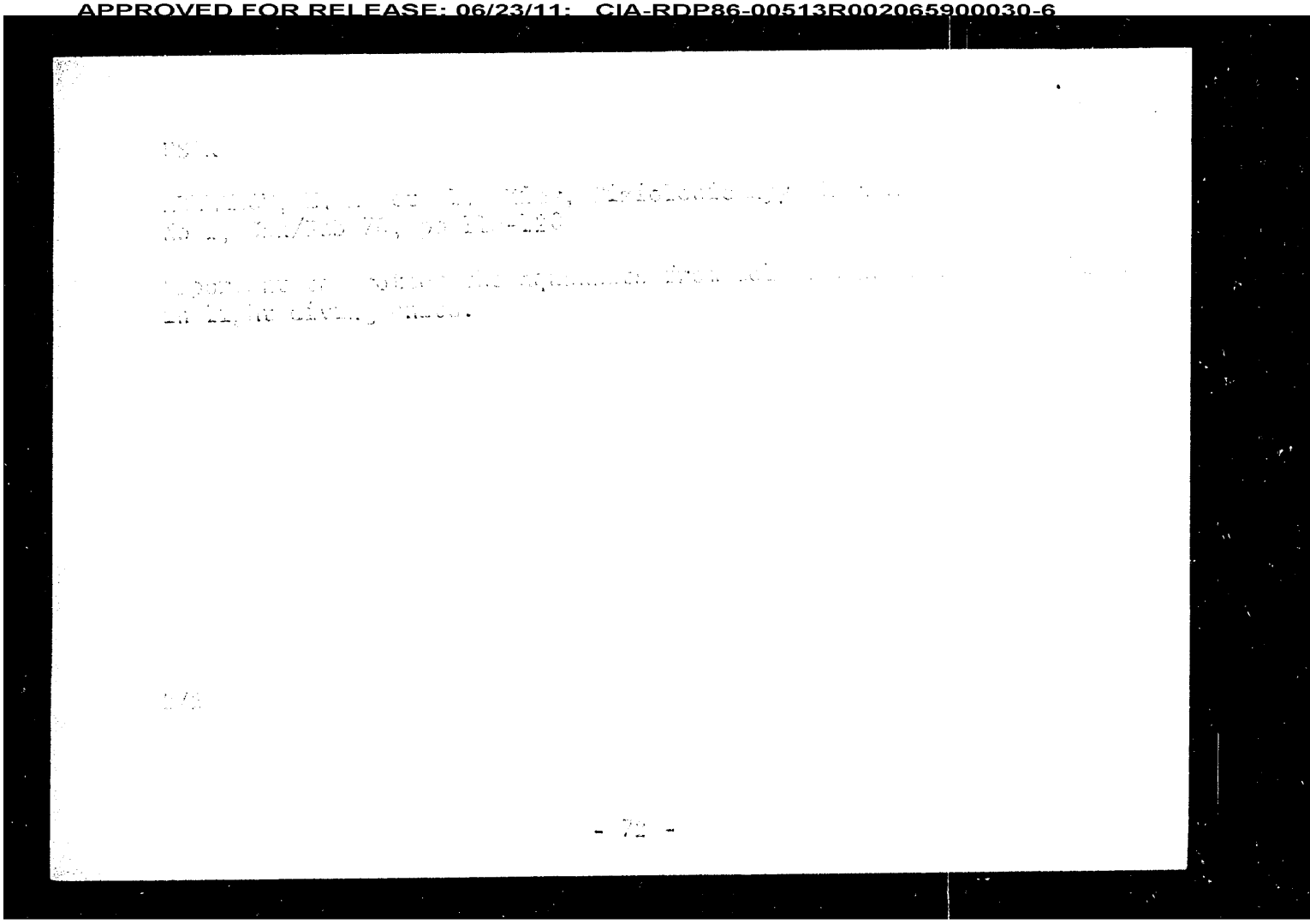
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/2038 STEP NO--UR/0076/70/044/001/0277/0280

CIRC ACCESSION NO--AP0132295

UNCLASSIFIED



ILLEGIBLE

3/3 022

CIRC ACCESSION NO--AP0136728

ABSTRACT/EXTRACT--AS A RESULT OF THE DESCRIBED INVESTIGATION THE FOLLOWING PRELIMINARY CONCLUSIONS WERE MADE: FROM AMONG MANY FACTORS AFFECTING A HUMAN BEING SUBJECTED TO PROLONGED STAYING UNDERWATER MOST IMPORTANT FOR BLOOD CIRCULATION ARE HIGH HUMIDITY AND AIR TEMPERATURE, AND CONTINUOUS INHALING OF SUBTOXIC CONCENTRATIONS OF OXYGEN; AFTER BEING IN A SUBMARINE LABORATORY FOR THREE TO FOUR DAYS AN ADAPTATION OF THE ORGANISM TAKES PLACE; WHEN PERFORMING UNDERWATER WORK IN A LIGHT AQUANAUT SUIT MUCH ATTENTION SHOULD BE PAID TO PROTECTING THE AQUANAUT FROM COLD; AND IN DESIGNING OPEN TYPE UNDERWATER BASE, MEANS SHOULD BE PROVIDED FOR KEEPING AQUANAUTS WARM. FACILITY: KAFEDRA KHVOROB VUKHA, GORLA, NOSA DONETS'KOGO MEDYCHNOGO INSTYTUTU; MEDYCHNYYVIDDIL VNDI GIRNYCHORYATUVAL'NOY SPRAVY.

2/3 022 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136728

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERIPHERAL BLOOD CIRCULATION OF EIGHT AQUANAUTS WHO SPENT SEVEN DAYS IN AN OPEN TYPE SUBMARINE LABORATORY WAS STUDIED TO DETERMINE THE ADAPTIVE STRESSES OF A PERSON SUBJECTED FOR A PROLONGED TIME TO UNUSUAL CONDITIONS WITHOUT PREVENTIVE PREPARATION FOR SUCH CONDITIONS. THESE AQUANAUTS PARTICIPATED IN IKHTIANDR-67 BLACK SEA EXPEDITION IN AUGUST-SEPTEMBER, 1967. THE LABORATORY, A SPECIALLY DESIGNED FOUR CHAMBER VESSEL HAVING VOLUME OF 28 M PRIME3 WITH FORCED VENTILATION, WAS SUBMERGED TO 14 M DEPTH. IT WAS EQUIPPED FOR CONTINUOUS LIVING UNDER WATER. ATMOSPHERIC PRESSURE OF 2.2 ATM, TEMPERATURE OF 23 TO 31 C AND HUMIDITY OF 93PERCENT WERE CONTINUOUSLY MAINTAINED. ONLY HEALTHY INDIVIDUALS, 24 TO 42 YEARS OLD WERE SELECTED FOR INVESTIGATION. TWICE A DAY THEY WALKED FOR 30 MIN AT A DEPTH OF OVER 14 M AND ONCE A DAY PERFORMED PHYSICAL WORK FOR 20 MIN. WATER TEMPERATURE VARIED FROM 20 TO 23 C BUT AQUANAUTS WERE WARMLY DRESSED. PERIPHERAL BLOOD CIRCULATION WAS MEASURED BEFORE SUBMERGING AND ON THE SURFACE AFTER BEING UNDER WATER FOR ONE, TWO, THREE, FOUR, AND FIVE DAYS. IN ADDITION TO BLOOD CIRCULATION AND PULSE, SKIN TEMPERATURE IN THE MOUTH AND AT VARIOUS POINTS OF THE BODY AND LIMBS WERE MEASURED. MEASURING TECHNIQUES AND INSTRUMENTATION ARE DESCRIBED IN DETAIL AND DATA OBTAINED ARE PRESENTED IN TABULAR FORM.

UNCLASSIFIED

USSR

UDC 546.193'131

NISEL'SON, L. A., TRET'YAKOVA, K. V., and AKHMADEYEV, V. YA., State Scientific Research and Development Institute of Rare Earth Metal Industry

"The Liquid-Vapor Equilibrium in the Systems Formed by Arsenic Trichloride With Some Sulfur and Phosphorus Containing Admixtures"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 18, No 4, Apr 73, pp 1092-1097

Abstract: The liquid-vapor equilibrium was studied ebuliometrically in the systems formed by $AsCl_3$ with $SOCl_2$, SO_2Cl_2, $PSCl_3$ and $POCl_3$. Using the method of simple equilibrium distillation, relative volatilities have been refined for the area of pure $AsCl_3$. It has been established that $POCl_3$ and $PSCl_3$ ($\alpha POCl_3/AsCl_3 = 1.1$ and $\alpha PSCl_3/AsCl_3 = 1.5$ at 760 mm Hg) are the most difficult of the admixtures to remove by fractional distillation. The density of binary mixtures has been determined as a function of temperature. The correspondence between the type of the systems studied and the degree of deviation from Raoul law and the molar volumes of the mixtures from the additive rule have been confirmed.

1/1

2/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132295

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MEASURED DISPLACEMENT OF A DIVIDED INDEX ON A SPECIALLY CONSTRUCTED DEVICE HAS BEEN USED TO DET. THE COEFF. OF DISSUION (D) AND FOLLOWING THE PROCESS OF DIFFUSION BY A SERIES OF AQ. SOLNS. OF SURFACE ACTIVE AGENTS (PAV) INTO DISTD. H SUB2 O AT CONCNS. OF 0.2 TO 1PERCENT AND A TEMP. OF 20DEGREES. THE PAV EXAMD. WERE: OP-7 (I) AND OP-10 (II) (C SUB8 H SUB17 C SUB6 H SUB4 O(CH SUB2 CH SUB2, O) SUB10); 44-11 (III), AND 44-22 (IV) (HOCH SUB2 CH SUB2 O) SUBX (CH MINUS CH SUB2 O) SUBN (CH SUB2 MINUS CH SUB2 O) SUBY H; AND OZHK (V) (ME(CH SUB2) SUBN CO SUB2 (CH SUB2 CH SUB2 O) SUBX H). THE SPECIAL CONSTRUCTION PERMITTED THE IMMEDIATE ACQUISITION OF NUMERICAL DATA WITHOUT PHOTOGRAPHY AND STANDARDIZATION. MICELLE FORMATION INTERFERED WITH DIFFUSION AT HIGHER CONCNS. OF ALL THE PAV AND A CHARACTERISTIC DECREASE IN D WAS OBSD. AT HIGHER CONCNS. THE HIGHEST D WAS OBTAINED WITH III. IV WAS SOMEWHAT LOWER AND CHANGED LESS OVER THE CONCN. RANGE. STILL LOWER D VALUES WERE OBSD. FOR I AND II AND THEIR D VALUES ALMOST COINCIDED AT HIGHER CONCNS. A VERY SMALL D WAS OBTAINED FOR V. FACILITY: UFIM. NEFT. NAUCH.-ISSLED. INST., UFA, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--MEASUREMENT OF THE DIFFUSION OF COLLOIDAL SURFACE ACTIVE AGENTS -U-

AUTHOR-(02)-AKHMADEYEV, M.KH., BABALYAN, G.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 277-80

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SURFACE ACTIVE AGENT, AQUEOUS SOLUTION, MEASUREMENT, PHYSICAL DIFFUSION/(U)PAV SURFACE ACTIVE AGENT, (U)OP7 SURFACE ACTIVE AGENT, (U)44 11 SURFACE ACTIVE AGENT, (U)44 22 SURFACE ACTIVE AGENT, (U)OZHK SURFACE ACTIVE AGENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/2038 STEP NO--UR/0076/70/044/001/0277/0280

CIRC ACCESSION NO--AP0132295

UNCLASSIFIED

ILLEGIBLE

ILLEGIBLE

3/3 022 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136728

ABSTRACT/EXTRACT--AS A RESULT OF THE DESCRIBED INVESTIGATION THE FOLLOWING PRELIMINARY CONCLUSIONS WERE MADE: FROM AMONG MANY FACTORS AFFECTING A HUMAN BEING SUBJECTED TO PROLONGED STAYING UNDERWATER MOST IMPORTANT FOR BLOOD CIRCULATION ARE HIGH HUMIDITY AND AIR TEMPERATURE, AND CONTINUOUS INHALING OF SUBTOXIC CONCENTRATIONS OF OXYGEN; AFTER BEING IN A SUBMARINE LABORATORY FOR THREE TO FOUR DAYS AN ADAPTATION OF THE ORGANISM TAKES PLACE; WHEN PERFORMING UNDERWATER WORK IN A LIGHT AQUANAUT SUIT MUCH ATTENTION SHOULD BE PAID TO PROTECTING THE AQUANAUT FROM COLD; AND IN DESIGNING OPEN TYPE UNDERWATER BASE, MEANS SHOULD BE PROVIDED FOR KEEPING AQUANAUTS WARM. FACILITY: KAFEDRA KHVOROB VUKHA, GORLA, NOSA DONETS'KOGO MEDYCHNOGO INSTYTUTU; MEDYCHNYYVIDDIL VNDI GIRNYCHORYATUVAL'NOY SPRAVY.

UNCLASSIFIED

2/3 022 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136728

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERIPHERAL BLOOD CIRCULATION OF EIGHT AQUANAUTS WHO SPENT SEVEN DAYS IN AN OPEN TYPE SUBMARINE LABORATORY WAS STUDIED TO DETERMINE THE ADAPTIVE STRESSES OF A PERSON SUBJECTED FOR A PROLONGED TIME TO UNUSUAL CONDITIONS WITHOUT PREVENTIVE PREPARATION FOR SUCH CONDITIONS. THESE AQUANAUTS PARTICIPATED IN IKHTIANDR-67 BLACK SEA EXPEDITION IN AUGUST-SEPTEMBER, 1967. THE LABORATORY, A SPECIALLY DESIGNED FOUR CHAMBER VESSEL HAVING VOLUME OF 28 M PRIME3 WITH FORCED VENTILATION, WAS SUBMERGED TO 14 M DEPTH. IT WAS EQUIPPED FOR CONTINUOUS LIVING UNDER WATER. ATMOSPHERIC PRESSURE OF 2.2 ATM, TEMPERATURE OF 23 TO 31 C AND HUMIDITY OF 93PERCENT WERE CONTINUOUSLY MAINTAINED. ONLY HEALTHY INDIVIDUALS, 24 TO 42 YEARS OLD WERE SELECTED FOR INVESTIGATION. TWICE A DAY THEY WALKED FOR 30 MIN AT A DEPTH OF OVER 14 M AND ONCE A DAY PERFORMED PHYSICAL WORK FOR 20 MIN. WATER TEMPERATURE VARIED FROM 20 TO 23 C BUT AQUANAUTS WERE WARMLY DRESSED. PERIPHERAL BLOOD CIRCULATION WAS MEASURED BEFORE SUBMERGING AND ON THE SURFACE AFTER BEING UNDER WATER FOR ONE, TWO, THREE, FOUR, AND FIVE DAYS. IN ADDITION TO BLOOD CIRCULATION AND PULSE, SKIN TEMPERATURE IN THE MOUTH AND AT VARIOUS POINTS OF THE BODY AND LIMBS WERE MEASURED. MEASURING TECHNIQUES AND INSTRUMENTATION ARE DESCRIBED IN DETAIL AND DATA OBTAINED ARE PRESENTED IN TABULAR FORM.

UNCLASSIFIED

1/3 · 022 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STATE OF PERIPHERAL BLOOD CIRCULATION IN PERSONS BEING FOR A LONG TIME IN AN OPEN TYPE SUBMARINE LABORATORY, HABITAT -U-

AUTHOR-(04)-AKHLAMOV, YE.A., GULYAR, S.O., GERASYUTENKO, YE.I., KHAES, O.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHNYY ZHURNAL, AKADEMIYA NAUK UKRAINS'KOI RSR, 1970, VOL 16, NR 1, PP 115-120

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD CIRCULATION, PERIPHERAL CIRCULATION, AQUANAUT, UNDERWATER RESEARCH LABORATORY, ATMOSPHERIC HUMIDITY, ATMOSPHERIC TEMPERATURE/(U)IKHTIANDR UNDERWATER LABORATORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1369 STEP NO--UR/0238/70/016/001/0115/0120

CIRC ACCESSION NO--AP0136728

UNCLASSIFIED

UDC 517.5

USSR

AKHIYEZER, N. I., RONKIN, L. I.

"Separately Analytical Functions of Many Variables and 'Wedge Point' Theorems"

Moscow, Uspekhi Matematicheskikh Nauk, Vol XXVIII, No 3(171), 1973, pp 27-42

Abstract: In this article the Bernstein method [S. Bernstein, Sur l'ordre de la meilleure approximation des fonctions continués par des polynomes de degré donné, Bruxelles, 1912] is used to obtain some propositions related to the Bernstein theorem belonging to other authors, as well as some new results. Another problem is investigated pertaining to the group of theorems of modern theory of functions of many variables, significant also with respect to applications to quantum field theory. These are the so-called "wedge point" theorems, the first of which was proved by Bogolyubov [N. N. Bogolyubov, et al., Voprosy teorii dispersionnykh sootnosheniy, Moscow, Fizmatgiz, 1958].

The discussion includes the holomorphic continuation of functions with the product of two neighborhoods, the holomorphic continuation of a function with the product of real axes, the relation of the Bernstein theorem to the wedge point theorems, removal of the assumption of boundedness of separate continuation, and some generalizations.

1/1

USSR

AKHIYEZER, I. A., LAZURIK-EL'TSUFIN, V. T., Physicotechnical Institute, Academy of Sciences of the UkrSSR, Khar'kov

"On Excitation of Ultrasound in Metals by a Beam of Charged Particles"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 12, Dec 72, pp 3693-3694

Abstract: The authors investigate the excitation of ultrasound in metal plates by beams of charged particles in accordance with the dynamic load mechanisms. As the beam is dissipated and decelerated by the solid material of the plate, it transmits momentum to the metal atoms and thus sets up a body force or pressure, causing acoustic oscillations. The longitudinal load (with respect to the incident beam) is calculated for cases of electron (positron) and proton beams. Exact formulas are derived for thick and thin targets. The results of numerical calculations of pressure are graphed for plates 0.01 cm thick.

1/1